

**REMARKS**

In response to the Office Action mailed February 9, 2005, Applicants respectfully request reconsideration. To further the prosecution of this application, each of the issues raised in the Office Action is addressed herein.

Claims 1 to 93 are pending in this application, of which claims 1, 20, 35, 51, 57, 64, 71, 78, 86, 87, 90, 91, 92 are independent claims. By this amendment, Applicants have amended claim 92 to address a minor typographical error. No other claims are amended. The application as now presented is believed to be in allowable condition.

A. **Claim Rejections under 35 U.S.C. §103 over Kiltz**

On page 2 of the Office Action, claims 1 to 3, 5 to 7, 9 to 17, 20 to 22, 24, 25, 27 to 32, 92 and 93 (including independent claims 1, 20 and 92) were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Kiltz (U.S. Patent No. 5,191,319). Applicants respectfully traverse these rejections.

1. **Independent Claim 1**

Applicant's claim 1 is directed to a method for executing a lighting program to control a plurality of light emitting diodes (LEDs). The method includes acts of: (A) receiving an audio input in digital form; (B) digitally processing the audio input to determine at least one characteristic of the audio input; (C) executing the lighting program to generate control signals to control the plurality of LEDs; and (D) during execution of the lighting program in the act (C), generating at least one of the control signals based at least in part on the at least one characteristic of the audio input.

In item 3 on page 2 of the Office Action, the Examiner concedes that Kiltz fails to disclose or suggest LEDs. Applicants agree that Kiltz lacks this teaching. The Examiner alleges, however, that it would have been obvious to one of ordinary skill in the art to use LEDs as colored light sources, suggesting that "LEDs are merely one of many various implementations of colored light sources and their use would not require inventive skill" (to

this end, the Examiner also references Drago, U.S. Patent No. 5,461,188, discussed further below). Applicants disagree with this assertion.

Perhaps more notably, however, Kiltz fails to disclose or suggest “executing a lighting program to control a plurality of light emitting diodes (LEDs),” as recited in the act (C) of Applicants’ claim 1; such a limitation is completely missing in the Kiltz reference. For at least the foregoing reasons, claim 1 patentably distinguishes over Kiltz, and the rejection should be withdrawn.

As set forth in MPEP §2143, three criteria must be met in order to establish a *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the cited reference(s) or in the knowledge generally available to one of ordinary skill in the art, to modify the cited reference(s) or to combine reference teachings (if multiple references are cited). Second, there must be a reasonable expectation of success. The teaching or suggestion to modify the reference(s) or to combine reference teachings, as well as the reasonable expectation of success, must both be found in the prior art and not based on Applicants’ disclosure. Third, the prior art reference(s), when viewed as a whole, must teach or suggest all of the claimed features. Failure to meet any one of these criteria – a teaching or suggestion of all claim elements, a specific suggestion or motivation to modify or combine the prior art, and a reasonable expectation of success – is sufficient to render an obviousness rejection improper.

Again, in the rejection of claim 1, at least one of the foregoing obviousness criteria - namely, a teaching or suggestion of all claim elements - clearly is not met. As indicated above, Kiltz completely fails to disclose or suggest “executing a lighting program to control a plurality of light emitting diodes (LEDs),” as recited in claim 1.

Rather, Kiltz discloses a system of electronic components, or “hardware,” for decoding analog audio signals representing a music source, and providing a visual color display that varies in accordance with the frequency spectrum of the music source. In Kiltz, a preselected assignment of light color to different audio frequency bands of the music source is defined by decoder logic (i.e., an arrangement of NAND gates, see Fig. 3). More specifically, in Kiltz, analog driver circuits that control colored lights are “hard wired” to the

output of the decoder logic in a fixed predetermined manner (see Fig. 4). Thus, in Kiltz, there is no lighting program to be executed so as to control anything (including light sources), nor is there any component capable of executing any type of program.

Interestingly, the Examiner essentially concedes as much on page 11 of the Office Action. In particular, in the rejection of independent claim 35 over the combination of Kiltz and Drago (discussed in greater detail below), the Examiner admits that “Kiltz does not explicitly state at least one storage medium to store the lighting program.” Thus, if Kiltz fails to disclose or suggest a storage medium, as the Examiner correctly concludes, then Kiltz necessarily fails to teach or suggest the execution of a lighting program. Without a storage medium to store a lighting program, *a fortiori*, Kiltz could not possibly execute a lighting program; even the most modest conventional microcontrollers or microprocessors include some minimum storage capacity to facilitate program execution.

In sum, in the rejection of claim 1, the Examiner fails to meet at least one criteria for establishing a *prima facie* case of obviousness pursuant to MPEP §2143; namely, the cited Kiltz reference fails to teach or suggest all claim limitations. For at least the foregoing reasons, claim 1 patentably distinguishes over Kiltz and is in condition for allowance. Therefore, the rejection of claim 1 should be withdrawn.

Claims 2-19 depend from claim 1 and are allowable based at least upon their dependency. For the sake of brevity, Applicants believe that it is unnecessary at this time to argue the allowability of each of the dependent claims individually. However, Applicants do not necessarily concur with the interpretation of the dependent claims as set forth in the Office Action, nor do Applicants concur that the basis for the rejection of any of the dependent claims is proper. Therefore, Applicants reserve the right to specifically address the patentability of the dependent claims in the future, if deemed necessary.

For example, with respect to the rejection of dependent claim 7, in item 8 on page 4 the Examiner takes official notice that, allegedly, “composite audio and video signals are well known in the art.” If the rejection of claim 7 is to be maintained, the Examiner is respectfully requested to cite a reference in support of his position as required under MPEP

§2144.03 or, if the Examiner is relying upon facts within his personal knowledge, to file an affidavit establishing those facts pursuant to MPEP §2144.03.

2. Independent Claim 20

Independent Claim 20 is directed to a computer readable medium encoded with a program that, when executed, performs the method of claim 1. Accordingly, for reasons similar to those discussed above in claim 1, claim 20 patentably distinguishes over Kiltz and is in condition for allowance. Moreover, it is noteworthy that the Office Action fails to point to any teaching or suggestion in any of the cited references of a “computer readable medium encoded with a program that, when executed, performs a method for executing a lighting program to control a plurality of light emitting diodes.”

Claims 21-34 and 93 depend from claim 20 and are allowable based at least upon their dependency.

3. Independent Claim 92

Claim 92 is directed to a method for executing a lighting program to control a plurality of light emitting diodes (LEDs) to create a light show. The method comprises acts of: (A) receiving an audio input having a duration and varying in time during the duration of the audio input; (B) processing the audio input to determine at least one first characteristic of the audio input at a first time during the duration; (C) executing the lighting program in synchronization with the audio input to generate control signals to control the plurality of LEDs; and (D) during execution of the lighting program in the act (C) at a time that is prior to the first time during the duration of the audio input, generating at least one of the control signals based at least in part on the at least one first characteristic of the audio input so that the light show anticipates changes in the audio input.

The Office Action completely fails to mention all of the salient limitations of claim 92. Specifically, the Office Action makes no mention of the particular limitations in the act (D) relating to “at a time that is prior to the first time during the duration of the audio input,” and “so that the light show anticipates changes in the audio input.” Rather, the Office

Action summarily lumps the rejection of claim 92 in with the rejections of claims 1 and 20 without specifically addressing all of the limitations of claim 92. For at least this reason, the rejection of claim 92 is improper.

In any case, nowhere in the reference does Kiltz disclose or suggest generating a control signal “at a time that is *prior* to the first time during the duration of the audio input,” wherein the control signal is based at least in part on at least one first characteristic of the audio input so that “the light show *anticipates* changes in the audio input,” as recited in claim 92 (emphasis added). Rather, Kiltz merely receives analog signals from a music source and decodes the signals into binary form (col. 7, lines 6-19). These binary signals correspond to a particular visual color which is displayed accordingly in real time (col. 7, lines 20-50). At no point does Kiltz disclose or suggest two time intervals (e.g., a first time and a time prior to the first time) at which any particular signals are decoded, generated, or otherwise processed, to facilitate the generation of colored light to anticipate a change in the audio input. In view of the foregoing, claim 92 patentably distinguishes over Kiltz and is in condition for allowance.

B. Claim Rejections under 35 U.S.C. §103 over the Combination of Kiltz and Drago

In Item 18 on page 8 of the Office Action, claims 4, 18, 19, 23, 33 to 40, 42 to 51, 53 to 60, 62 to 67, 69 to 74, 76 to 82 and 84 to 91 (including independent claims 35, 51, 57, 64, 71, 78, 86, 87 and 91) were rejected as allegedly being obvious over Kiltz in view of Drago et al. (U.S. Patent 5,461,188). Applicants respectfully traverse these rejections.

1. Independent Claim 35

Applicants’ claim 35 is directed to an apparatus for executing a lighting program to control a plurality of light emitting diodes (LEDs). The apparatus comprises at least one storage medium to store the lighting program, at least one input to receive an audio input, and an audio decoder to digitally process the audio input to determine at least one characteristic of the audio input. The apparatus also comprises at least one controller, coupled to the audio decoder and the at least one storage medium, to execute the lighting

program to generate control signals to control the plurality of LEDs. Claim 35 further recites that the at least one controller generates at least one of the control signals based at least in part on the at least one characteristic of the audio input.

The rejection of claim 35 cannot be maintained and is improper, as neither Kiltz nor Drago discloses at least one controller that is coupled to *both* an audio decoder and at least one storage medium, as required by claim 35. Hence, no combination of elements from Kiltz or Drago can meet this limitation - rather, the controller recited in claim 35 is completely missing from both of the cited references. Therefore, the Office Action fails to meet at least one of the criteria for establishing a *prima facie* obviousness rejection, pursuant to MPEP §2143; namely, the cited Kiltz and Drago references fail to teach or suggest all of the limitations of claim 35.

In particular, on page 11 of the Office Action, the Examiner concedes that "Kiltz does not explicitly state at least one storage medium to store the lighting program." Accordingly, if Kiltz fails to disclose or suggest at least one storage medium, as the Office Action correctly concludes, then Kiltz also *necessarily* fails to disclose or suggest at least one controller coupled to at least one storage medium, as required by claim 35.

Turning now to Drago, in a similar manner, the Applicants respectfully submit that Drago fails to disclose or suggest an audio decoder. Accordingly, if Drago fails to disclose or suggest an audio decoder, then Drago also *necessarily* fails to disclose or suggest at least one controller coupled to an audio decoder, as required by claim 35.

In view of the foregoing, neither Kiltz nor Drago discloses or suggests at least one controller coupled to an audio decoder and at least one storage medium, as recited in claim 35.

The Office Action contends that, allegedly, both Kiltz and Drago "alter lighting effects based upon audio calculations." Applicants respectfully disagree with this characterization. The Office Action points to no specific teaching or suggestion in Drago of any component or components configured to "alter lighting effects based upon audio calculations;" more specifically, the Office Action fails to point to any audio decoder in Drago.

In Drago, lights are not controlled based on audio signals. Rather, the generation of audio and visual effects in Drago are controlled in parallel, simultaneously, by a central program control circuit. This circuit generates signals to simultaneously control, in parallel, sound and light; in Drago, the light is not controlled in response to first processing, decoding, or otherwise analyzing, an audio signal (Drago, col. 5, line 41- col. 6, line 13).

In particular, with reference to Drago's Fig. 1, the program control circuit 12 includes means for producing sound control signals and light control signals (col. 5, lines 41-45). The frequency of a system clock 14 in the control circuit 12 is controllable by a user so as to set a tempo of music emanating from a speaker 26, as well as the speed of light patterns produced by light sources 32 (col. 5, lines 45-54). The control circuit 12 also includes a program memory circuit 16 for storing audio programs and light source programs in parallel (col. 5, lines 55-56). Pulses generated by the system clock 14, at a user controlled frequency, are received by the memory circuit 16, which then *simultaneously* produces sound control signals and light control signals in accordance with the audio and light programs stored *in parallel* (col. 6, lines 1-5, emphasis added).

Accordingly, in Drago, the light control signals and the light programs are not executed or generated as a result of, or in response to, some prior processing or decoding of an audio signal; rather, in Drago, light and sound are controlled in parallel simultaneously, in response to a user selected tempo or speed, to provide synchronized light and sound effects. Hence, there is no need for an audio decoder in Drago and, in fact, Drago does not disclose or suggest one.

In sum, Kiltz fails to disclose or suggest a controller coupled to at least one storage medium. Drago fails to disclose or suggest a controller coupled to an audio controller. Thus, the combination of Kiltz and Drago fails to disclose or suggest at least one controller, coupled to an audio decoder and at least one storage medium, as recited in claim 35. For at least the foregoing reasons, claim 35 patentably distinguishes over Kiltz and Drago, and is in condition for allowance. Therefore, the rejection of claim 35 should be withdrawn.

Claims 36-50 depend from claim 35 and are allowable based at least upon their dependency.

2. Independent Claim 51

In item 22 on pages 10-12 of the Office Action, the reasons for rejecting claim 51 are given together with those for the rejection of claim 35, discussed above. However, it is noteworthy that the Office Action fails to discuss all of the respective limitations of claim 51, and in fact completely ignores some of the claim limitations.

Claim 51 is directed to a computer readable medium encoded with a first program that, when executed on a processor, performs a method for executing a lighting program to control a plurality of light emitting diodes (LEDs). As recited in claim 51, the processor is programmed with a second program that processes an audio input to determine at least one characteristic of the audio input. The method performed by execution of the first program by the processor comprises acts of: (A) receiving information from the second program relating to the at least one characteristic of the audio input; (B) executing the lighting program to generate control signals to control the plurality of LEDs; and (C) during execution of the lighting program in the act (B), generating at least one of the control signals based at least in part on the at least one characteristic of the audio input received from the first program.

Neither Kiltz nor Drago, respectively or in combination, discloses or suggests all of the limitations of claim 51. First, as discussed above, Kiltz does not disclose any programs of any kind for execution by a processor. Second, Drago fails to disclose a first program that receives information from a second program that processes an audio input. For at least the foregoing reasons, claim 51 patentably distinguishes over the combination of cited references, and is in condition for allowance. Therefore, the rejection of claim 51 should be withdrawn.

Claims 52-56 depend from claim 51, and are allowable based at least upon their dependency.

With respect to dependent claim 56, in item 34 on page 16 of the Office Action, the Examiner takes official notice that, allegedly, “composite the [sic] MP3 format is well known in the art as well as programs to process them. Moreover, the source of the audio

does not affect the scope of the invention and thus is viewed as intended use.” Applicants disagree with both of these assertions.

First, with respect to purportedly well-known concepts, if the rejection of claim 56 is to be maintained, the Examiner is respectfully requested to cite a reference in support of his position as required under MPEP §2144.03; alternatively, if the Examiner is relying upon facts within his personal knowledge, the Examiner is respectfully requested to file an affidavit establishing those facts pursuant to MPEP §2144.03.

Second, with respect to the Examiner’s assertion regarding so-called “intended use,” Applicants completely disagree with the notion that “the source of the audio does not affect the scope of the invention.” Neither Kiltz nor Drago say anything remotely related to MP3 signals. Accordingly, it is entirely plausible, based at least upon the cited references, that a particular method of processing and/or using an audio input in MP3 format, or a particular apparatus that processes, uses, or generates an MP3 related signal, as exemplified by the concepts recited in claim 56, is patentable. Accordingly, if the rejection of claim 56 is to be maintained, the Examiner is respectfully requested to cite an appropriate authority in support of his position with respect to “intended use.”

### 3. Independent Claims 57 and 64

Claim 57 is directed to a method for executing a lighting program to control a plurality of light emitting diodes (LEDs). The method comprises acts of: (A) receiving an audio input and an input from at least one timer; (B) analyzing the audio input to determine at least one characteristic of the audio input; (C) executing the lighting program to generate control signals to control the plurality of LEDs; and (D) during execution of the lighting program in the act (C), generating at least one of the control signals based at least in part on the at least one characteristic of the audio input and the input from the at least one timer.

Claim 64 is directed to a computer readable medium encoded with a program that, when executed, performs the method of claim 57.

Neither Kiltz nor Drago, respectively or in combination, discloses or suggests all of the limitations of claims 57 and 64. First, as discussed above, Kiltz does not disclose any

programs of any kind for execution by a processor. Second, Drago fails to disclose any feature, including a lighting program, related to the analysis of an audio input to determine at least one characteristic of the audio input. For at least the foregoing reasons, claims 57 and 64 patentably distinguish over the combination of cited references, and are in condition for allowance. Therefore, the rejections of these claims should be withdrawn.

Claims 58-63 and 65-70 depend from one of claims 57 and 64, and hence are allowable based at least upon their dependency.

4. Independent Claim 71

Like claim 51, claim 71 is directed to a computer readable medium encoded with a first program that, when executed on a processor, performs a method for executing a lighting program to control a plurality of light emitting diodes (LEDs). Claim 71 also recites, *inter alia*, that the processor is programmed with a second program that processes an audio input to determine at least one characteristic of the audio input. At least for reasons similar to those discussed above in connection with claim 51, claim 71 patentably distinguishes over the combination of cited references and is in condition for allowance.

Claims 72-77 depend from claim 71 and are allowable based at least upon their dependency.

5. Independent Claim 78

Claim 78, like claim 35, recites, *inter alia*, at least one controller coupled to an audio decoder and at least one storage medium. Accordingly, at least for reasons similar to those discussed above in connection with claim 35, claim 78 patentably distinguishes over the combination of cited references and is in condition for allowance.

Claims 79-85 depend from claim 78 and are allowable based at least upon their dependency.

6. Independent Claims 86 and 90

Claim 86 is directed to a method for executing a lighting program, comprising, *inter alia*, receiving an audio input and an input from a graphical user interface, and generating at least one control signal based at least in part on at least one characteristic of the audio input and the input from the graphical user interface. Claim 90 recites, *inter alia*, providing a graphical user interface (GUI) that displays information representative of a plurality of LEDs.

Both Kiltz and Drago are completely silent with respect to a graphical user interface. Kiltz, as conceded by the Examiner, does not have the capacity to store any graphical information (there is no storage device), much less display any information on a graphical user interface. The invention disclosed in Drago is incorporated into articles of clothing, such as a pair of shoes. Drago makes no mention or suggestion whatsoever of equipping shoes or other articles of clothing with a graphic user interface. Accordingly, no combination of these references can render claim 86 unpatentable; thus, the rejection of claim 86 should be withdrawn.

#### 7. Independent Claim 87

Claim 87 is directed to a method for execution on a computer. Neither Kiltz nor Drago discloses or suggests a computer.

Claim 87 recites, *inter alia*, executing, on the computer, a lighting program to generate control signals to control a plurality of light emitting diodes and, during execution of the lighting program, generating at least one of the control signals based at least in part on the at least one characteristic of the audio input. Again, Kiltz fails to disclose or suggest a lighting program, and Drago does not control any signal, during execution of a lighting program, based at least in part on at least one characteristic of an audio input. For at least the foregoing reasons, claim 87 patentably distinguishes over the combination of cited references and is in condition for allowance. Therefore, the rejection of claim 87 should be withdrawn.

Claims 88-89 depend from claim 87 and are allowable based at least upon their dependency.

8. Independent Claim 91

Claim 91 is directed to a method for executing a lighting program to control a plurality of light emitting diodes (LEDs). The method comprises acts of : (A) receiving an audio input; (B) analyzing the audio input to determine at least one characteristic of the audio input; (C) storing information related to the at least one characteristic of the audio input; (D) executing the lighting program, after completion of the act (C), to generate control signals to control the plurality of LEDs; and (E) during execution of the lighting program in the act (D), reading the stored information and generating at least one of the control signals based at least in part on the at least one characteristic of the audio input.

Neither Kiltz nor Drago discloses or suggests all of the limitations of the method of claim 91. For example, neither reference discloses or suggests the acts (C), (D), and (E) recited in claim 91. For at least this reason, claim 91 is in condition for allowance, and the rejection of claim 91 should be withdrawn.

C. General Comments on Dependent Claims

As noted elsewhere herein, since each of the dependent claims depends from a base claim that is believed to be in condition for allowance, Applicants believe that it is unnecessary at this time to argue the allowability of each of the dependent claims individually. However, Applicants do not necessarily concur with the interpretation of the dependent claims as set forth in the Office Action, nor do Applicants concur that the basis for the rejection of any of the dependent claims is proper. Therefore, Applicants reserve the right to specifically address the patentability of the dependent claims in the future, if deemed necessary.

D. Conclusion

It is respectfully believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment set forth in the Office Action does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may

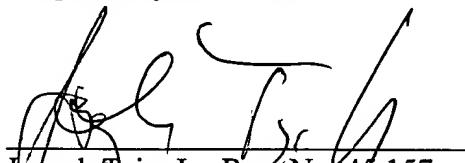
Serial No. 09/886,958  
Confirmation No. 5019  
Attorney Docket No. CKB-005.01  
(f/k/a C01104-70005)

be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Furthermore, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify any concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' representative at the telephone number indicated below to discuss any outstanding issues relating to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 06-1448, reference CKB-005.01.

Respectfully submitted,



\_\_\_\_\_  
Joseph Teja, Jr., Reg. No. 48,157  
Ruth J. Ma, Reg. No. 55,414  
Attorneys for Applicants  
Tel. No. (617) 832-1257  
Fax. No. (617) 832-7000

Date: June 9, 2005  
**Customer No: 25181**  
Patent Group  
Foley Hoag, LLP  
155 Seaport Blvd.  
Boston, MA 02210-2600